

## CLAIMS

What is claimed is:

1. A single chip digital signal processing apparatus for real time video/audio/data encoding, said apparatus comprising:

a video encoder for generating encoded video data from uncompressed video data;

an audio encoder for generating encoded audio data from uncompressed audio data; and

a mux processor to generate a multiplexed output stream of data from said encoded video data and said encoded audio data and said encoded user data.

2. The apparatus of claim 1 wherein encoding parameters of said video encoder and said audio encoder and said data encoder are programmable.

3. The apparatus of claim 1 further comprising a digital video broadcasting (DVB) formatter to generate a DVB interface signal to transmit encoded data directly from said single chip to another chip

without the aid of an intermediate interface external to said single chip.

4. The apparatus of claim 1 further comprising a PCI interface comprising a DMA engine for transferring at least one of compressed and uncompressed data to and from said single chip, to directly communicate with a PCI bus without the aid of an intermediate interface external to said single chip.

5. The apparatus of claim 1 further comprising a I2C/GPIO interface that may be programmed to allow said single chip to communicate with other devices external to said single chip using an I2C protocol or some other general interface protocol.

6. The video encoder of claim 1 further comprising a video blanking interval (VBI) and picture interval extractor to extract and format user data embedded in a VBI and picture interval of said uncompressed video data into an encoded data stream.

7. The apparatus of claim 1 wherein said uncompressed video data and said uncompressed audio data are encoded with either MPEG-1 or MPEG-2 standards and Dolby AC-3.

8. The apparatus of claim 1 wherein said uncompressed video data comprises CCIR-656 video data.

9. The apparatus of claim 1 wherein said uncompressed audio data comprises one of I2S audio data and AC97 audio data.